

## ABSTRACT

A solar cell having a multijunction solar cell structure with a bypass diode is disclosed. The bypass diode provides a reverse bias protection for the multijunction solar cell structure. In one embodiment, the multijunction solar cell structure includes  
5 a substrate, a bottom cell, a middle cell, a top cell, a bypass diode, a lateral conduction layer, and a shunt. The lateral conduction layer is deposited over the top cell. The bypass diode is deposited over the lateral conduction layer. One side of the shunt is connected to the substrate and another side of the shunt is connected to the lateral conduction layer. In another embodiment, the bypass diode contains an i-layer to  
10 enhance the diode performance.

15

20

25